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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/784,259 | 02/24/2004 | Hirofumi Fukuoka | KOJIM-366-D1 | 1250 |
| 23599 7590 08/22/2007 MILLEN, WHITE, ZELANO & BRANIGAN, P.C. 2200 CLARENDON BLVD. SUITE 1400 ARLINGTON, VA 22201 | | | EXAMINER BHAT, NINA NMN | |
| | | | ART UNIT 1764 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/784,259

Applicant(s)

FUKUOKA ET AL.

Examiner

N. Bhat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The examiner acknowledges that this application is a divisional application of 09/773,677 filed February 2, 2001, now US Patent 6,821,495. The examiner further notes that in the parent application a certified English translation of the foreign priority document was provided, applicant's effective filing date for purposes of examination is February 4, 2000.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

3. Claims 3-5, 7-8, 10-12 and 13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Funahashi et al. US Patent 5,096,685.

Funahashi et al. teach a system for manufacturing fine grained SiO powder, wherein the system includes means for feed a raw material powder mixture containing silicon dioxide powder into reactor (16), the Specifically a vacuum furnace (1) includes a furnace chamber (12), an internal reaction chamber (16) which is in communication with a non-oxidizing gas into the reaction chamber. A heater (24) is installed in the furnace chamber to surround the reaction chamber. A SiO collection device (3) defines a SiO collection chamber (32). SiO Collection chamber (32) is connected to a vacuum source and vacuum passage, the SiO collection chamber is maintained at a pressure lower than atmospheric pressure. The SiO particles when heated are heated to a gas and the gas is cooled and condensed and the SiO material is collected in the collection chamber as a powder. [Note Figure 1, Column 5, lines 46 to Column 6, lines 67 and Column 13, lines 1-6] The system as described by Funahashi et al. an apparatus for continuously preparing a silicon oxide powder which includes feed mechanisms, capable of feeding a powder to the reaction furnace, the furnace is equipped with a heater, to heat the raw

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material charge of Silicon dioxide into a silicon oxide gas, there are conduit means from the reaction chamber which includes cooling means to condense the SiO gas into SiO particulate as well as collection means. With respect to applicant's limitations that the feed means includes a hopper, and that the vacuum pump is connected into the hopper, the deposition tank and/or recovery tank, this has been taught and depicted in Figures 4 and 5 and specifically described in Column 9, line 56 to Column 10, line 60. It is position of the examiner that the system taught by Funahashi et al. fully anticipates applicant's apparatus, but does not specifically recite that the collection chamber for the cooled SiO powder is a deposition chamber. It is maintained that the collection chamber as described by Funahashi et al. would function equivalently or is the same as the deposition chamber taught by applicant and if the collection chamber is different than the deposition chamber, the use of a deposition chamber for the collection chamber taught in Funahashi et al. would have been obvious to one having ordinary skill in the art.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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6. Claims 6, 9 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funahashi et al. US Patent 5,096,685.

Funahashi et al. teach the invention substantially as claimed for reasons delineated above and the following. Funahashi et al. teach an apparatus which is capable of preparing a silicon oxide powder which includes feed charge means of a powder mixture containing silicon dioxide powder to a reaction chamber, a reaction chamber wherein the raw material is reacted to produce a silicon oxide gas, means for transferring the silicon oxide gas from the reaction chamber to a deposition chamber or collection chamber wherein the SiO gas is cooled into SiO particulate or powder which is then recovered. As stated above, the collection chamber although not specifically described as a deposition chamber, the collection chamber functions equivalently to applicant's deposition chamber and the apparatus does produce cooling and condensing the SiO gas to produce a powder which anticipates the claims or in the alternative renders the claims obvious for reason described above. To specifically recite that the solid SiO gas is deposited onto a substrate which is horizontal and then scraped using scraping means would have been obvious to one having ordinary skill in the art from reading Funahashi et al. because the collection chamber and means associated with the collection chamber taught in Funahashi et al. provides a high purity grade of SiO powder and the collection chamber is broad enough to be interpreted to include be a deposition chamber, to remove the powder from a substrate using a scraper or means for removal of a particulate from a substrate would have been obvious to one having ordinary skill in the art at the time the invention was made absent criticality in showing.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JP 63103815 abstract only teaches an apparatus for continuous production of SiO Fine powder. JP 09110412 abstract only teach a system for producing silicon oxide for use an


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evaporating material when silicon oxide is vapor deposited onto a plastic film by irradiation with electron beam.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


N. Bhat
Primary Examiner
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